TEST REPORT: 719189099-CHM10-TSL

Date: 15 NOV 2010 Tel: +65 68851312 Fax: +65 67784301

Client's Ref: QM-0410-135 Email: yi.zhang@tuv-sud-psb.sg

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SUBJECT

Evaluation of Toxic Fumes Generated From Material Sample During Burning

CLIENT

Ricycled Asia Pacific Sdn Bhd
No 1, Jalan Tiaj 2/3,
Taman Perindustrian Alam Jaya,
42300 Bandar Puncak Alam,
Kuala Selangor,
Selangor Darul Ehsan,

Attn : Mr Simon Denby

SAMPLE SUBMISSION DATE

02 Nov 2010

DESCRIPTION OF SAMPLE

A piece of material sample labeled as follows was received.

1. Ricycled 55/45 (55% rice husk, 45% recycled PVC mixture)

DATE OF ANALYSIS

09 Nov 2010 – 15 Nov 2010

METHOD OF TEST

1. Analysis of Pyrolysis and Combustion Gases Generated From the Sample

According to NF X 70-100(1986) Method:
Fire Tests – Analysis of Pyrolysis and Combustion Gases – Tube Furnace Method as reference.

1.1 Sample Preparation of Test Specimen

The sample was conditioned at 23°C and 50% Relative Humidity for 48hours and tested as whole for the following tests.

1.2 Generation of Pyrolysis and Combustion Gases
Approximately 1.0 g of the powder sample was then used for the test in a stream of air at the air flow rate of 120L/hr at 600°C for 20minutes in a tube furnace.

METHOD OF TEST *(Cont'd)*

Toxic fumes collected during the burning were analysed by the following methods:

a) Carbon Monoxide and Carbon Dioxide : Directly determined by Horiba Automotive Emission Analyzer
b) Hydrogen Cyanide : By Pyridine – Pyrazalone Method
c) Others ions : By Ion Chromatography

RESULTS

Table 1: **The Toxic Fumes Results For "Ricycled 55/45" Sample**

Toxic Fumes Generated	**"Ricycled 55/45" (mg/m^3 of Fire Effluents)**	**IDLH Values Limits [a] (mg/m^3)**
1. Carbon Dioxide, Average (Carbon Dioxide, maximum)	<200 358	73 000 -
2. Carbon Monoxide, Average (Carbon Monoxide, maximum)	<200 <200	1 400 -
3. Hydrogen Fluoride. HF	<5	25
4. Hydrogen Chloride, HCl	<5	76
5. Hydrogen Bromide, HBr	<5	101
6. Sulfur Dioxide, SO_2 [b]	<5	270
7. Nitrogen Dioxide, NO_2 [c]	<5	38
8. Hydrogen Cyanide, HCN	<5	56

[a] The values in Table 1 are the IDLH values of the listed gases (the concentration of the gas in the atmosphere which for an exposure time of 30mins is immediately Dangerous to Life or Health) given in the NIOSH Guide [1].
[b] Sulfur Dioxide includes Sulfur trioxide expressed as sulfur dioxide
[c] Nitrogen dioxide includes nitric oxide expressed as nitrogen dioxide

1. The above analytical toxic fume results generated from the sample were below the IDLH Value of the listed gases (the concentration of the gas in the atmosphere which for an exposure time of 30mins is immediately Dangerous to Life or Health) in the NIOSH Guide.

MS TAN SER LING
TECHNICAL EXECUTIVE

DR ZHANG YI
CHEMIST
MICROCONTAMINATION DIAGNOSIS
CHEMICAL & MATERIALS

PSB Singapore

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March 2010